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Varieties of Grapes

University of Tennessee Agricultural Experiment Station

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UNIVERSITY OF TENNESSEE

Agricultural Experiment Station

BULLETIN



VOL. IX.

DECEMBER, 1896.

No. 4.

VARIETIES OF GRAPES.

Bulletins of this Station will be sent, upon application, free of charge,
to any Farmer in the State.

KNOXVILLE, TENNESSEE, U. S. A.

KNOXVILLE, TENN.

BEAN, WARTERS & GAUT, PRINTERS.

1896.

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THE AGRICULTURAL EXPERIMENT STATION

OF THE UNIVERSITY OF TENNESSEE.

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The Station Bulletins and Reports will be sent, free of charge, to any farmer within the State.


Packages by express, to receive attention, should be *prepaid*.

All communications should be addressed to the

SECRETARY OF THE

AGRICULTURAL EXPERIMENT STATION,

KNOXVILLE, TENN.

 The Experiment Station building, containing its offices, laboratories and museum, and the plant-house and horticultural department, are located on the University grounds, fifteen minutes walk from the Custom House in Knoxville. The Experiment farm, stables, milk laboratory, etc., are located one mile west of the University, on the Kingston pike. Farmers are cordially invited to visit the buildings and experimental grounds.

Bulletins of this Station will be sent, upon application, free of charge, to any Farmer in the State.

HORTICULTURAL DIVISION.

VARIETIES OF GRAPES.

R. L. WATTS.

Numerous inquiries are made concerning the most desirable varieties of grapes for cultivation in Tennessee. Commercial growers are enlarging their plantations, others are anticipating engaging in the enterprise for profit, while a great many farmers and amateurs are thinking of planting a few vines to supply the home table with choice grapes. It is hoped that each of the foregoing classes will find in the following pages the information desired regarding varieties adapted to various uses:

VARIETIES TESTED AT THE EXPERIMENT STATION.

NOTE—Dates of ripening are from 1896 records.

AGAWAM (*Labr.-Hybr.*); Rogers' No. 15.—Originated by E. S. Rogers, of Salem, Mass. A cross between Mammoth Sage and Black Hamburg. Vine vigorous; canes strong with comparatively few stout laterals; wood rather long-jointed; buds large and prominent. Bunches medium to large, fairly compact, shouldered; berries large, somewhat globular, with brownish-red or maroon color; skin thick, tough; flesh firm, juicy, sweet, sprightly, of a pleasant aromatic flavor; seed large, elongated. Ripens a few days later than Concord. Vines very productive. It is considered one of the best of Rogers' Hybrids.

AMBER (*Rip. X Labr.*)—Produced by Jacob Rommel, Morrison, Mo. Vine hardy, vigorous and quite productive in the Station vineyard. Bunches long, below medium weight, compact; berry medium size, oblong, pale amber color; skin thin, firm; flesh tender, juicy; flavor sweet, sprightly and of fair quality. Ripe August 25.

BACCHUS (*Rip.*)—A seedling of the Clinton, raised by James H. Ricketts, Newburg, N. Y. Vine hardy and vigorous in growth. Bunch medium, compact, shouldered; berry below medium, round, black with blue bloom; flesh tender, juicy, sprightly and very pleasant when the berries are fully ripe. It was not entirely ripe until September 10. This variety is considered superior to Clin-

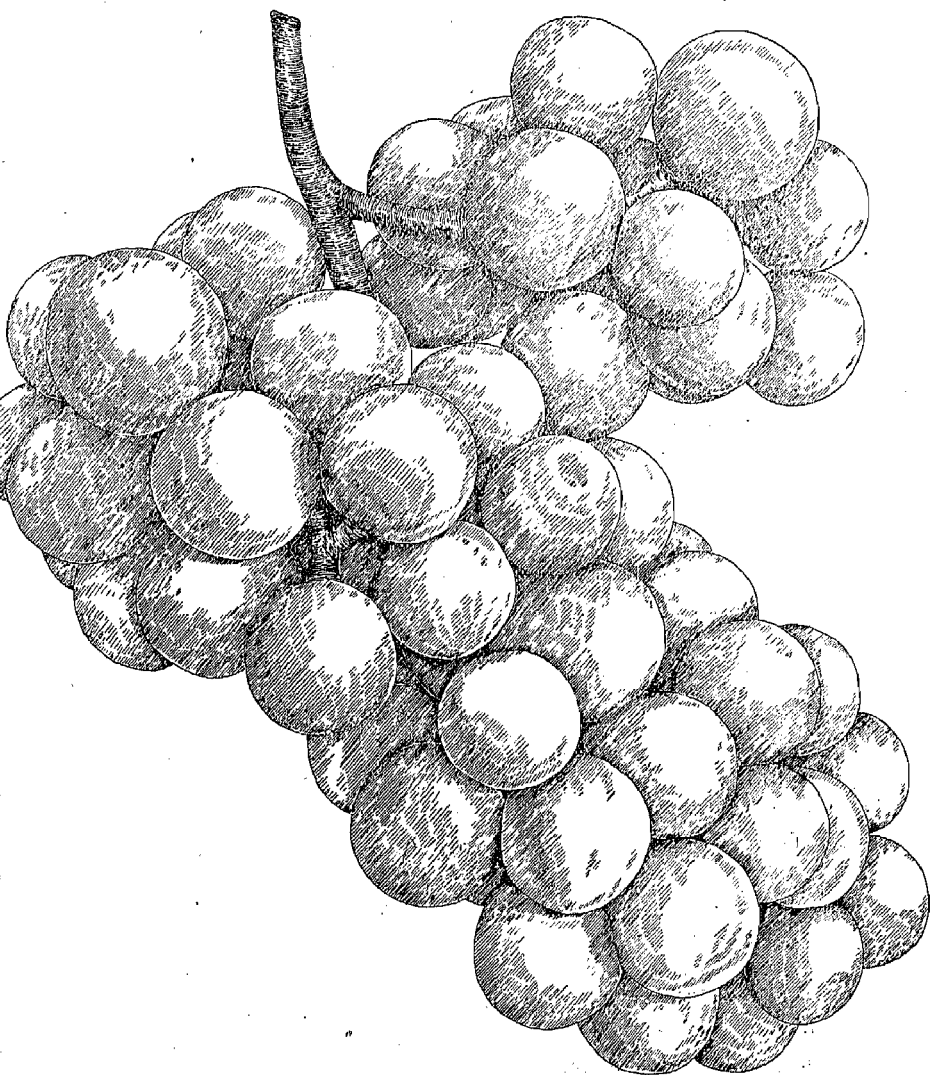
ton as a late table grape. The bunches can be left on the vines very late if protected by bagging. Has not been very productive in the Station vineyard, but the variety is of value to the amateur or persons desiring late grapes for the home table.

BEAGLE.—A seedling of Elvira crossed with Black Eagle, by T. V. Munson, Denison, Texas. Vine vigorous, wood long-jointed. Bunches small, fairly compact; berries slightly oblong, medium size, black, sweet, with a pleasant flavor. The vines produced no fruit the past season and only a few bunches last year. Berries ripe August 10. Not a valuable variety in this climate.

BELL.—This is one of the best grapes produced by T. V. Munson, of Denison, Texas. It is a hybrid of Elvira crossed with Delaware. The vines in our vineyard are large and vigorous; wood long-jointed. Bunch small, compact, shouldered; berry medium, round, greenish-white; skin very thin, firm; flesh firm, juicy; pulp tender, very little adhering to the skin; flavor mild, sweet, rich, pleasant. A grape of high quality. We regret to report that this grape has not produced very large crops in the Station vineyard. It is exceedingly interesting to the amateur, but we cannot recommend it for market purposes.

BERCKMANS (*Rip.-Hybr.*)—Raised by the late Dr. A. P. Wylie, Chester, S. C. A cross between the Clinton and Delaware. Vines in the Station vineyard have not made a healthy growth and have produced no fruit. This variety is said to be equal in quality to the Delaware and a strong grower. We cannot account for its weak growth on our grounds.

BLACK EAGLE (*Labr.-Hybr.*) (Underhill's No. 8-12.)—A Hybrid of Labrusca and Vinifera, originated by Stephen Underhill, Croton Point, N. Y. Vines are large and vigorous, foliage abundant. Bunches large, moderately compact, shouldered; berries large, oval, black, with blue bloom; skin thin, moderately firm; flesh tender, juicy, separates readily from the seed; flavor rich, sprightly, melting. Our greatest objection to Black Eagle is that the fruit sets imperfectly, and it is necessary to plant it with other varieties which bloom at the same time to insure a large crop. Even in our test vineyard where there are many other varieties near the vines, the bunches were quite imperfect. The clusters are very attractive when nearly all the berries have set. P. J. Berckmans, of Augusta, Ga., says concerning it: "Black Eagle we found unsurpassed in quality, productiveness and vigor. I have seen bunches that weighed a pound and three-quarters,



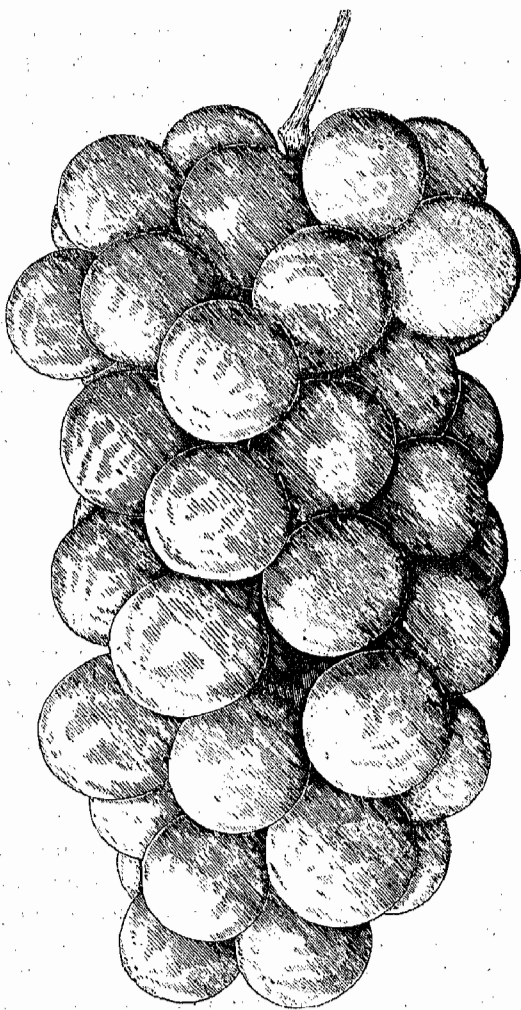
BRIGHTON.

grown at Macon, Ga., some years ago; but it has not sustained its former good record."

BLANCO.—A hybrid of Elvira with Triumph, originated by Prof. T. V. Munson. Bunch small, rather loose; berry medium, round, greenish-white; skin tough; quality rather inferior; not valuable on our grounds. Ripe August 8.

BRIGHTON (*Labr. X Vin.*)—Originated by Jacob Moore, Brighton, N. Y. A cross between Concord and Diana-Hamburg. Vine hardy, vigorous, canes medium to long-jointed, foliage abundant, leaves large. Bunch medium to large, moderately compact, shouldered; "berries medium to large, round, light red at first, changing to a dark crimson or maroon when fully matured, sometimes almost black, and covered with an abundant lilac bloom. The berries adhere well to the peduncle; skin thin but tough; flesh tender, slight pulp, sweet, juicy, slightly aromatic, very slightly vinous, and of very good quality for an early grape. It has its best flavor when it first ripens, but becomes pasty and looses its sprightly flavor when fully ripe," A. J. Downing. Ripe August 4. Vines very productive. It yields the largest crops when planted with other varieties to assist in fertilization. This variety is largely grown in the Eastern States where it is the leading table grape. All reports received from Tennessee growers who cultivate the Brighton are favorable concerning it in quality and productiveness, with one exception, when complaint is made of only medium yields. The Brighton is an excellent grape and especially valuable for the home garden.

BRILLIANT (*Labr.-Hybr.*)—Originated by T. V. Munson, Denison, Texas. The result of a cross between Lindley and Delaware effected in 1883. Vines hardy and vigorous. Bunches above medium, shouldered, compact; berries large, fully the size of Concord, resembling Delaware in color; skin thin but quite firm; flesh tender and very juicy; flavor rich, sprightly, equal to Delaware. This is thought by many to be the best of the grapes originated by Prof. Munson. The large berries with their superior quality renders it one of the best grapes for table use, and the Brilliant should be included in every amateur collection. It will probably prove valuable as a market variety in this State. On our grounds it has not been sufficiently productive to be profitable in commercial growing. We hope the Brilliant will be given a thorough trial in different sections of the state. No one will make a mistake by planting it in the home collection.



BRILLIANT.

CANADA (*Rip.-Hybr.*) (Arnold's No. 16.)—From seed of Clinton crossed with pollen of Black St. Peter's. Vines large and vigorous. Bunch small, compact; berry medium, black with a fine bloom; skin thin; quality fairly good; productive on our grounds.

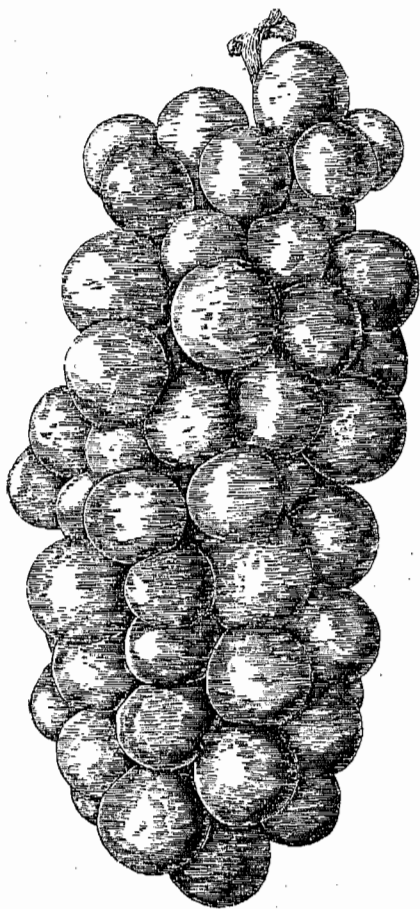
CATAWBA (*Labr.*)—Synonyms: Red Muncy, Catawba-Tokay, Singleton. Originated on the Catawba river, North Carolina. Bunches large, moderately compact, shouldered; berries above medium, round, deep red, covered with lilac bloom; skin rather thick; flesh somewhat pulpy, rich, sprightly, vinous, with a slight musky flavor; hardy, vigorous in growth.

The Catawba was introduced by Major John Adlum, Georgetown, D. C., over seventy years ago. It is a standard variety in many grape sections of the United States and highly profitable as a market variety where mildew is not too serious. The vine is especially subject to attacks from this disease. It is shipped South in large quantities and sells readily as a late grape. The vines in the Station vineyard are very strong and produce large crops. Fruit ripe August 22. Most reports from Tennessee growers are quite favorable in regard to the Catawba. It is too late in ripening, however, to be the most profitable for cultivation in this state. Before it is fully ripe Concord grapes from the North are placed on the Tennessee markets.

CHAMPION (*Labr.*)—Synonyms: Early Champion, Talman's Seedling, Beaconsfield. Origin disputed. Vines very strong and produce heavy crops. Bunches large, shouldered, compact; berry round, bluish-black, large; skin thick, quite firm; ripened with Moore's Early. The quality of this grape is so poor that it should never be planted.

CLINTON (*Rip.*)—Synonym: Worthington. Originated at Hamilton College, N. Y. in 1821. Bunches medium, compact; berry round, below medium size, black with a heavy bloom; skin thin, tough; flavor brisk and vinous, rather acid; should hang on the vines until late to develop its best flavor; frost greatly improves the flavor; vines very strong and productive. The Clinton is grown to some extent for market in this state but it should not be recommended for this purpose. A few vines are desirable in the home collection to furnish late fruit.

CONCORD (*Labr.*)—Out of twenty-six reports from Tennessee growers, twenty-five of the lists naming the best varieties for cultivation include the Concord. These reports show the popularity



CANADA.

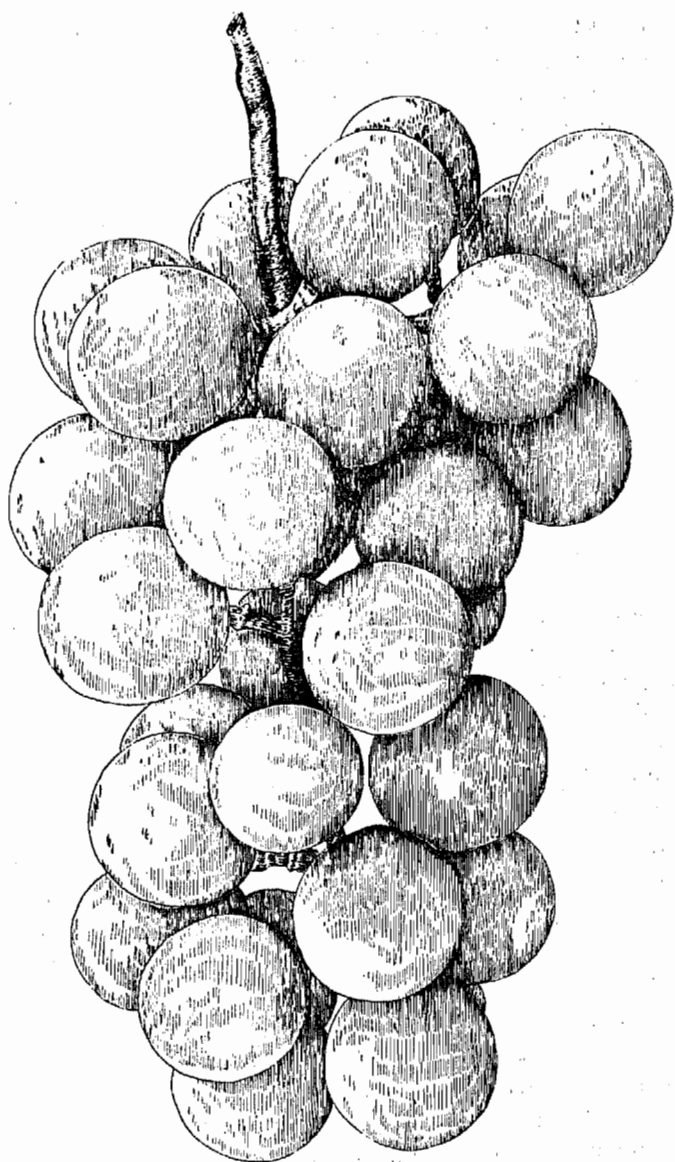
of this variety in Tennessee. It was originated over forty years ago by E. W. Bull, Concord, Mass. The valuable manual issued by Bush & Son & Meissner says the following concerning the Concord: It has advanced steadily and securely in public favor until it occupies to-day the most important position in the estimation of both grape growers and grape consumers as the most valuable variety for general use, and the low price at which it is offered places it within reach of all. We all recognize its faults or shortcomings, said Campbell, but its good qualities, in the way of hardiness, health, vigorous growth, great productiveness, fine appearance and fairly good quality, combined with remarkable adaptability to almost every condition of soil and climate where grapes can be grown, justly gives it a high position from which it cannot easily be displaced—especially since its disposition to rot can be checked. It maintains its position at the head, and more Concords are grown and marketed than any and all other sorts.

Practically every consumer of grapes is familiar with the Concord and the majority prefer it to other black grapes. A Knoxville grower contributes some valuable information concerning the popularity of Concord. He placed some excellent Wordens on the market, the basket bearing this name. Although much superior in quality to Concord, there were few purchasers of the Worden. The grapes were then placed in baskets labeled Concord and found a ready sale. The public was thoroughly familiar with this old variety while few purchasers had ever heard of the Worden.

The grape manual mentioned above is quite complimentary in regard to the quality of this grape when grown in East Tennessee. It states: In some localities, however, especially in East Tennessee and parts of Virginia, the Concord becomes so very sweet and rich as scarcely to be recognized.

CONELVA.—A cross between Elvira and Black Eagle produced by T. V. Munson. Vines large, vigorous, but not very productive. Bunch small, loose; berry medium, red; skin thick, firm; flesh sweet, juicy, of medium quality. Not valuable in this locality.

DELAWARE.—Origin unknown. It was found over forty years ago in the garden of Paul H. Provost, Frenchtown, N. J., who had "immigrated from Switzerland, and brought many varieties of foreign grapes, which he cultivated in his garden. We have reasons to believe it an accidental hybrid, a natural cross between



DIAMOND.

the *Vitis Æst.*, *Labr.* and *Vin.* Munson considers it a hybrid of *Bourquiniana* and *Labrusca*." Grape manual of Bush & Son & Meissner.

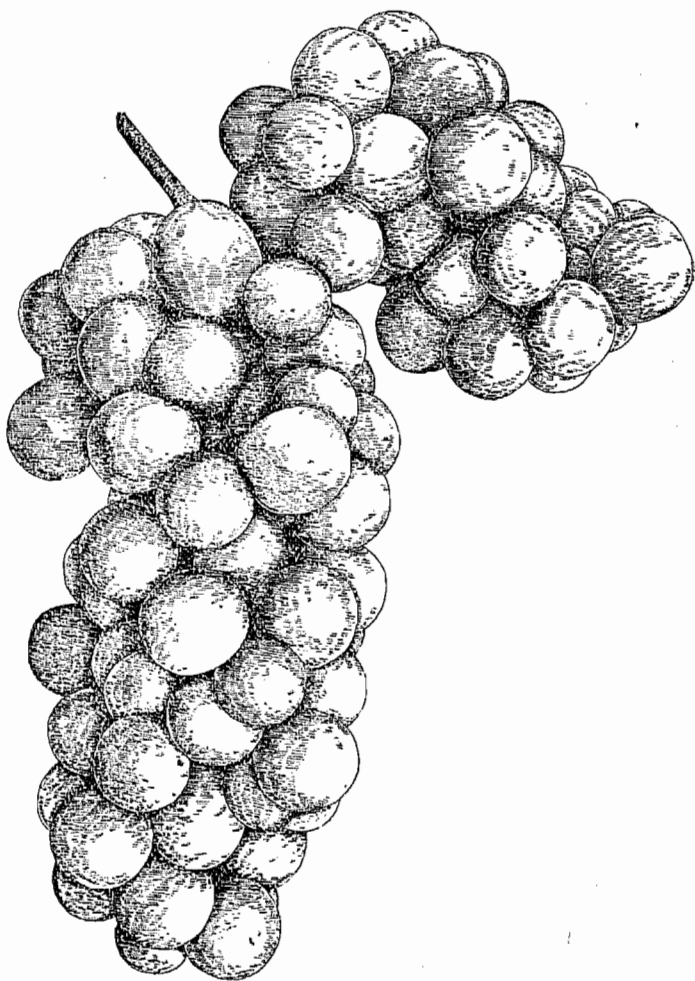
The Delaware is largely grown in this state and leads all other varieties in quality. Its flavor is equal if not superior to any other American grape. The vines are slow growers but healthy if given the proper attention. It is an indispensable variety for the home garden, and many consider the Delaware profitable for market purposes. The vines, however, are not so productive as many other varieties, and for this reason the Delaware is not universally popular with the commercial growers of Tennessee. In the report of Mr. J. T. Allen, a prominent and extensive grower near Knoxville, the Delaware is recorded as very productive, while the Niagara and Catawba are said to be only moderately productive on his grounds.

Bunches small to medium, compact, usually shouldered; berry below medium, round, bright red, covered with a thin whitish bloom; skin thin, firm; flesh juicy, rich, vinous, sprightly. Ripens a few days later than Concord.

DIAMOND (*Labr. X.*)—Originated by Jacob Moore, Attica, N. Y. From seedling of Concord fertilized by Iona. Vine vigorous and productive. Bunch large, compact, shouldered, often double-shouldered; berries above medium size, round, greenish-white; skin thin, rather tough; flesh tender, juicy, of high quality. We consider this one of the best white grapes for cultivation in the state. It is well adapted both for market purposes and home culture. Ripe August 5. Diamond is recommended by leading grape growers of the country.

DOWNING (*Æst.-Hybr.*)—Originated by James H. Ricketts, Newburg, N. Y. A cross between Croton and Black Hamburg. Vine large, vigorous, fairly productive. Bunch large, shouldered; berry large, nearly black with a light bloom; flesh juicy, tender, of good quality. Ripe August 18.

DUCHESS (*Labr.-Hybr.*)—This variety has done remarkably well at the Experiment Station and it is one of our favorite varieties as a table grape. We endorse all that is said concerning it in the Bushberg Catalogue from which the following full description is taken: A fine white table grape, raised near Newburg, N. Y., by the late A. J. Caywood, who stated that "it was produced by crossing a white Concord seedling with Delaware or Walter, the pollen of both being applied at the same time." The



DUCHESS.

vine is a vigorous grower, with moderately short-jointed shoots; leaves large, light green, rather thick, coarsely serrate, adhere to the vine very late in the season; vine productive. Bunch medium, shouldered, occasionally double-shouldered, compact; berries medium, roundish; skin rather thick, light green at first, but pale greenish-yellow when mature, sometimes a golden yellow where fully exposed and gathered late, and covered with a thin whitish bloom, almost transparent, dotted with diminutive black spots; flesh tender, free from pulp, juicy, sweet, spicy, rich and of excellent quality; the berries adhere strongly to the peduncle, and the fruit keeps a long time after being gathered. Ripens soon after Concord. John J. Thomas, recognized as authority among pomologists, says: In quality it is unquestionably one of the most delicious of all out-door varieties, and in growth the vines possess great vigor and hardiness.

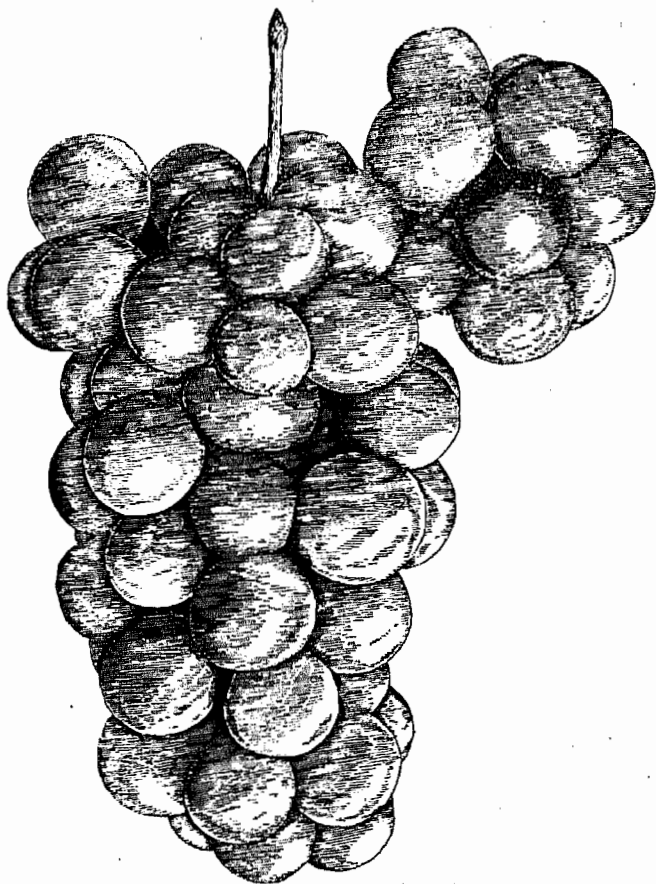
We recommend the Duchess as one of the best varieties for amateurs and family use. It does not require high fertilizing and is especially valuable for its keeping qualities, keeping without difficulty until spring in the North.

EARLY MARKET.—Originated by T. V. Munson. A hybrid of the wild Post-Oak grape with Triumph or Agawam. Vines vigorous but not productive. Bunch small, loose; berry small, round, black, with a blue bloom; flesh juicy, sweet, pleasant.

EARLY VICTOR (*Labr. X.*)—Originated by John Burr, Leavenworth, Kan. Produced by crossing a seedling of the Delaware with a vigorous grape of the Labrusca class. Vine very vigorous and highly productive in the Station vineyard. Bunch medium, very compact, frequently shouldered and sometimes double-shouldered; berry medium, round, black with a heavy blue bloom; flesh juicy, sprightly, vinous, rich; quality excellent; ripe July 24. Generally ripens with Moore's Early. A superior early black grape, valuable in the home collection. Moore's Early is more profitable for market.

ELVIRA (*Ripr.-Hybr.*)—A seedling of Taylor, originated by Jacob Rommel, Morrison, Mo. Vine quite vigorous and fairly productive. Bunch small to medium, shouldered, very compact; berry medium, greenish-white; flesh juicy, tender, sweet, above medium in quality. Not especially valuable on our grounds as a table grape.

EATON (*Labr.*)—Raised by Calvin Eaton, Concord, Mass., from seed of Concord. Vines large, vigorous and very productive;



EARLY VICTOR.

bunch large, showy, compact; berry large, black, with blue bloom; skin thick; flesh juicy, tender, pleasant, not as sweet as Concord nor as good in quality. The Eaton is an interesting grape, but there are so many other better varieties that it does not deserve a place in either the home collection or commercial vineyard.

EMPIRE STATE.—Originated by James H. Ricketts, Newburg, N. Y. From seed of the Hartford fertilized with the Clinton. Vines in the Station vineyard are only fairly vigorous and productive. The bunches are large, long, shouldered; berries above medium, white with a thick white bloom; flesh tender, juicy, sweet, sprightly; quality good. Only one grower in the state sends a favorable report about Empire State. It is generally unsatisfactory for any purpose.

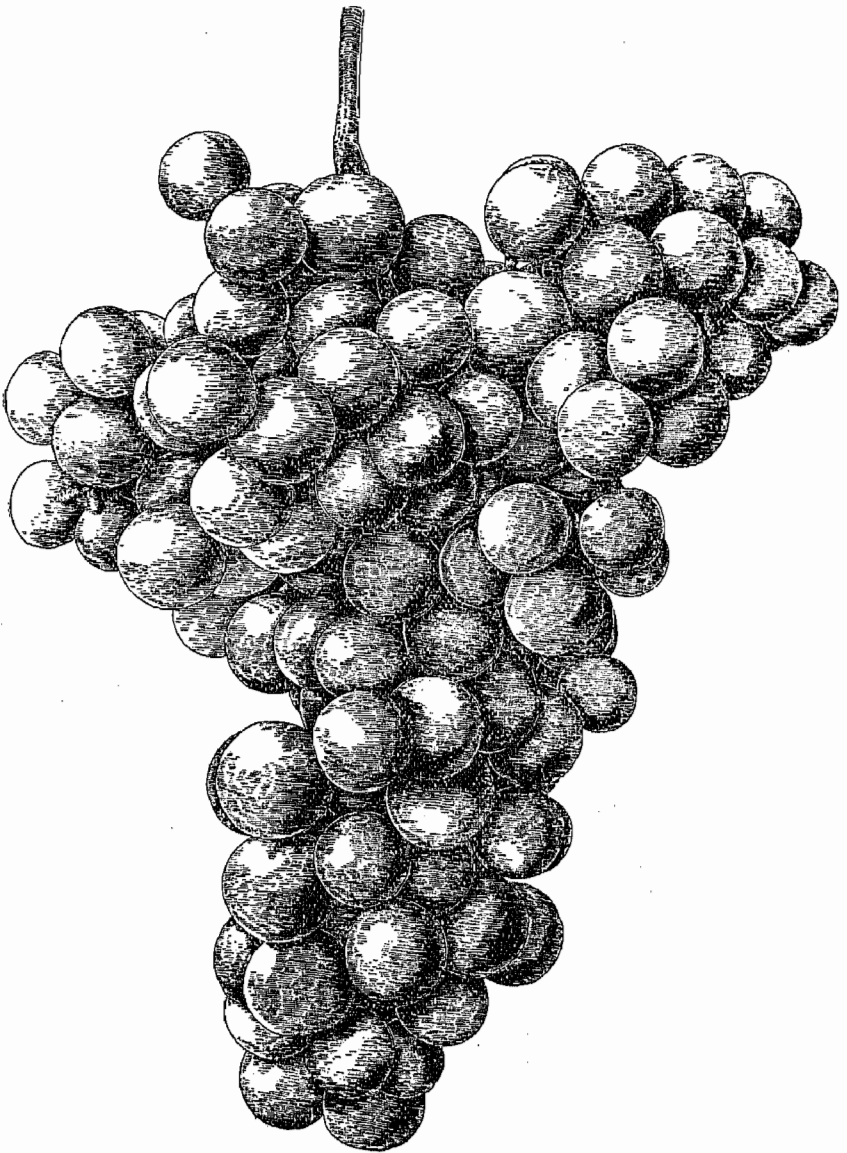
EXCELSIOR (*Labr.-Hybr.*)—Originated by James H. Ricketts. Vines vigorous and very productive. Bunches large, shouldered, compact; berry medium to large, pale red, sweet, pleasant. We consider this a very good variety although it does not seem to be largely grown. Mr. Ricketts thinks this his finest grape. Ripe August 26.

FAITH (*Rip. X.*)—A seedling from Taylor originated by Jacob Rommel. Vines large and healthy in the Station vineyard, but yield very small crops. Bunch medium, shouldered; berries small, pale-amber colored. Of doubtful value on our grounds.

GAERTNER (*Labr.-Hybr.*) Rogers' No. 14.—Hybrid between White Chasselas and a wild *Labrusca*. Vines vigorous and productive. Bunches above medium, compact; berry medium to large, red; skin thin, firm; flavor rich, sprightly, aromatic; quality very good. One of the best grapes in our collection. The bunches and berries are showy. Ripe August 4.

GOETHE (*Labr.-Hybr.*) Rogers' No. 1.—Vines healthy and very productive. Bunches medium to large, fairly compact; berry very large, "of a yellowish green, sometimes blotched, with a pale red towards the sun and entirely red when fully ripe;" skin thin, translucent; flesh tender, melting, juicy, sweet, "with a peculiar, delicious aroma." We consider this a very valuable variety for cultivation in this state.

HARTFORD (*Labr.*)—Synonym: Hartford Prolific. Raised from seed of Isabella, at Hartford, Conn., over forty years ago. Vines vigorous and very productive. Bunches large, shouldered, compact; berry above medium, black; flesh pulpy, juicy, with a



HERBEMONT.

decided foxy flavor. Ripe July 24. An early grape of inferior quality. On account of earliness and great productiveness, the Hartford has been largely cultivated. But it should not be grown for either market or family use as there are many better varieties. Moore's Early is much more desirable as an early grape for general purposes. The Bushberg Catalogue says concerning it: Let us discard the Hartford, which only destroys the appetite for grapes, and injures the sale and prices of all sorts; while a really good very early market grape would increase the demand for all later varieties. And we have now far better early varieties, earlier than Hartford even.

HERBEMONT (*Æst.*) Synonym: Warren, Herbemont's Madeira, Warrenton, Neil.—Origin unknown. The most vigorous grower in the Station vineyard, and exceedingly productive. Bunches very large, long, shouldered and unusually compact; berries small, black, with a blue bloom; skin thin; flesh tender, very juicy, rich, sprightly; quality very good. Ripe the latter part of September. A very valuable late grape for home use.

HILGARD.—Originated by T. V. Munson. A hybrid of the wild Post-Oak grape with Triumph or Agawam. Vines vigorous. Bunches medium to large, shouldered, fairly compact; berry above medium, black; skin thin, quite firm; flavor sweet, rich, pleasant. Ripe August 10.

IVES (*Labr. X*.) Synonym: Ives' Seedling.—Originated by Henry Ives, Cincinnati, Ohio. Vines very strong and bear large crops. Bunches medium to large, compact, shouldered; berry medium, slightly oblong, black when fully ripe; skin tough, adheres well to the peduncle; flesh pulpy, sweet, but with a decided foxy flavor, hence it cannot rank as first class in quality. The Ives is quite largely grown in this state but we believe it is being rapidly discarded for other superior varieties.

JAEGER (*Æst. X Linc.*) Synonym: Hermann Jaeger.—Originated by T. V. Munson. A cross between the wild Post-Oak grape and Herbemont. Vines vigorous and quite productive. Bunches large, compact and shouldered; berry medium, dark purple in color, nearly black; flesh tender, juicy, sprightly. Quality good.

LADY (*Labr.*)—A seedling of Concord originated in Muskingum County, Ohio, and introduced to the public by Geo. W. Campbell, of Ohio. Vines in the Station vineyard are fairly vigorous and

productive. Bunch small, loose; berry large, round, greenish-white; skin thin, tender; flesh firm, juicy, tender; flavor superior to Concord, slightly vinous. Ripe July 30. Requires a rich soil to produce large crops. Of value to the amateur and for home use.

LEADER (*Labr.*)—Originated by B. F. Merriman, Ohio. Vines strong and productive. Bunch small to medium, loose; berry medium, round, greenish-white; skin thin, very tender; flesh very firm, juicy, sweet, rich, sprightly. Quality very good. Ripe August 10. If the bunches were larger and more compact we could recommend it as a valuable grape for general cultivation.

LENOIR (*Æst.*) Synonym: Black Spanish, El Paso, Burgundy, Jack or Jacques.—Originated in Lenoir County, N. C. Bunch medium to large, shouldered, compact; berry small, round, nearly black, covered with light bloom; skin thin, tender; flesh tender, very juicy, rich in coloring matter, sweet, vinous. Quite desirable as a table grape when fully ripe. Ripe August 22.

LINDLEY. (*Labr.-Hybr.*) Rogers' No. 9.—Produced by hybridizing the wild Mammoth grape of New England with the Golden Chasselas. Vines strong, healthy, productive. Bunch medium, long, rather loose; berry large, of a "brick-red" color; skin thin, firm; flesh tender, juicy; flavor, sweet, possessing a rich, pleasant, aromatic flavor. Ripe August 12. We consider this an excellent table grape and it well deserves a place in the home collection.

LYON (*Rip.-Hybr.*)—Originated by T. V. Munson. Vines quite vigorous and moderately productive. Bunch small, compact; berry medium, light red in color, skin tough, thin, pulpy; flesh tender, juicy; flavor rich, sprightly, rather too acid. Ripe July 25.

MARTHA (*Labr.*)—Originated by Samuel Miller, Bluffton, Mo. A seedling of Concord. Vines vigorous and quite productive; Bunch medium, shouldered, fairly compact; berry medium, round, greenish-white, "when fully ripe, pale yellow, covered with white bloom;" skin thin; flesh juicy, tender, very sweet, good. Not especially desirable.

MASSASOIT (*Labr.-Hybr.*) Rogers' No. 3.—Vine vigorous, and very productive; bunch medium, short, shouldered; berry medium to large, round, brownish-red; skin of medium thickness; flesh tender, sweet, rich; of good quality. Ripe August 21. Valuable for the family collection and probably for market.

MAXATAWNEY (*Labr.*)—Raised in Montgomery County, Pa., in 1844. Vine vigorous, moderately productive. Bunch medium size, fairly compact; berry above medium, "pale yellow with slight amber tint on the sunny side;" flesh tender, juicy, sweet, of a superior quality. Ripe August 28. Quite a valuable late grape.

MERRIMACK (*Labr.-Hybr.*) Rogers' No. 19.—Vines large and productive. Bunches small, rather loose; berry large, round, black, covered with a blue bloom; skin firm; flesh sweet, juicy, of medium quality. This variety is not fully self-fertile, hence, other varieties that bloom at the same season must be planted near the Merrimack to secure the best results. Ripe August 10. Should not be recommended for general planting,

MILLS (*Labr.-Hybr.?*)—Originated by William H. Mills, Hamilton, Ontario, by crossing Muscat-Hamburg with Creveling. Vines in the Station yard large and very productive. Bunches very large, compact, with medium shoulder; berry large, round, black, adheres well to the peduncle; skin very thick and tough; seeds large and long; flesh tender, juicy, meaty, sweet with a sprightly Muscat flavor. Ripe August 10.

MOORE'S EARLY (*Labr.*)—Originated by Jacob Moore, Concord, Mass., from seed of Concord. Vines vigorous in growth and very productive; bunches somewhat smaller than Concord, compact, rarely shouldered; berries larger than Concord, when fully ripened equal to its parent in quality. The great value of Moore's Early is in its early ripening, being from ten days to two weeks earlier than Concord. Berries ripe in the Station vineyard July 22. It is a general favorite in this state and is rapidly gaining in popularity. A few growers report that it is not so productive as the Concord and other varieties. These medium yields may be due to an insufficient supply of plant food for this variety, as it requires liberal manuring to give the best results.

MISSOURI RIESLING (*Rip. X.*) Synonym: Grein's No. 1.—Originated by Nicholas Grein, Hermann, Mo. Vines vigorous growers and very productive. Bunches medium, compact, slightly shouldered; berries medium, round, greenish-white, light red when fully ripe; skin thin, tender; flesh tender, juicy, rich, sprightly; quality very good. An excellent grape, but we prefer several other white grapes for general use.

MRS. MCCLURE (*Rip.-Hybr.*)—Originated by Dr. A. P. Wylie, Chester, S. C. A cross between Clinton and Peter Wylie. Vines

very vigorous and productive. Bunches medium, shouldered, not very compact; berries medium, round, white; quality quite good. Probably valuable, but it requires further trial on our grounds.

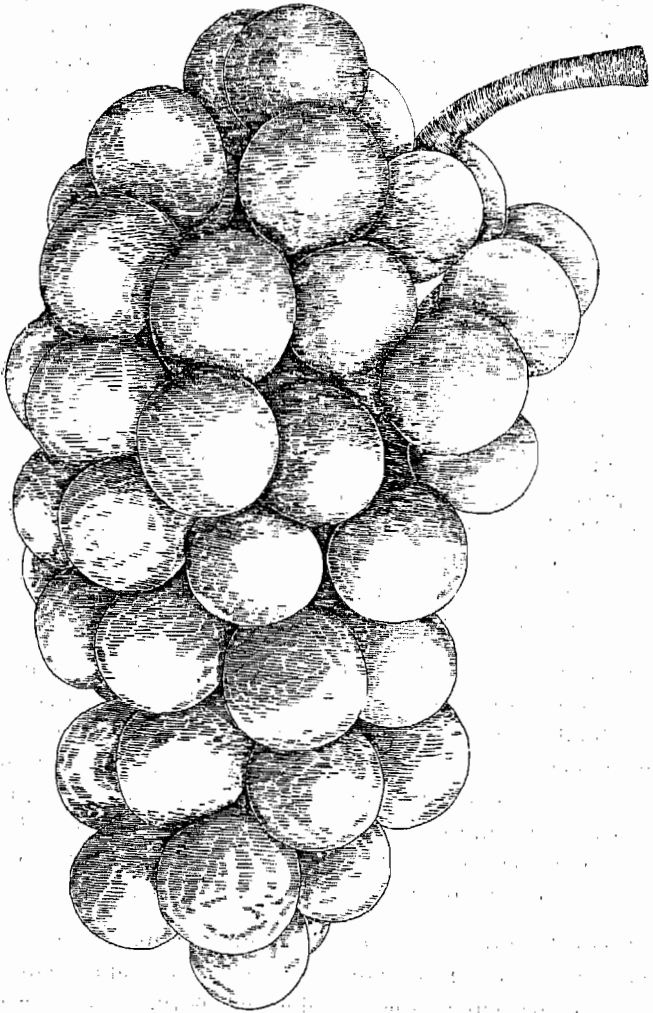
NIAGARA (*Labr. X.*)—Originated by Hoag and Clark, Lockport, N. Y., in 1872. A cross of Concord and Cassady. Vines very vigorous and very productive. Bunches large, compact, sometimes shouldered; berry large, roundish, pale green in color changing to pale yellow when fully ripe; skin thin, tough; flesh tender, juicy, sweet, similar to Concord in quality, ripening about with Concord. The Niagara is largely cultivated in Tennessee. It is far from first class in quality, but the beauty of both bunches and berries, vigor and great productiveness of vines, render it a special favorite, and it leads all other white grapes in quantity grown for market.

NORTON (*Æst.*) Synonym Norton's Virginia.—A native wild grape discovered on Cedar Island, James river, near Richmond, Va., in 1835, and named after Dr. D. N. Norton, a prominent horticulturist who lived near Richmond. Vines are very vigorous and productive. Bunches long, compact and shouldered; berries small, black; flesh tender, juicy, sweet, brisk; excellent in quality when fully ripe. It is a very late grape and valuable for home use on this account. The berries will remain on the vines until after frost, when they are very good.

OTHELLO (*Rip.-Hybr.*) Arnold's No. 1.—Vines on our grounds are vigorous and very productive. Bunches very large, compact and shouldered; berries slightly elongated, large, black with a blue bloom; skin thin, very tough; flesh solid, juicy, rich, quite pleasant. It is an interesting grape because of its origin, being the result of Clinton fertilized by the pollen of Black Hamburg. We do not consider it of the best quality, and doubt whether it would prove valuable for cultivation in this state.

PETER WYLIE (*Labr.-Hybr.*)—Vines medium in vigor, not very productive. Bunches small, loose; berries medium, round, greenish-white, becoming golden-yellow when fully ripe; flesh juicy, sweet, medium in quality. Ripe August 12. Inclined to rot worse than any other variety at the Experiment Station. Not valuable.

POCKLINGTON (*Labr.*)—Originated by John Pocklington, at Sandy Hill, Washington county, N. Y. Raised from seed of Con-



NIAGARA.

cord. Vines in Station vineyard vigorous and productive. Bunches large, compact; berries large, round, pale green changing to a golden color when fully ripe; flesh tender, fairly juicy, sweet; medium in quality. Ripe August 21. We do not consider this a valuable variety. Many other varieties of superior quality should be selected in preference to the Pocklington.

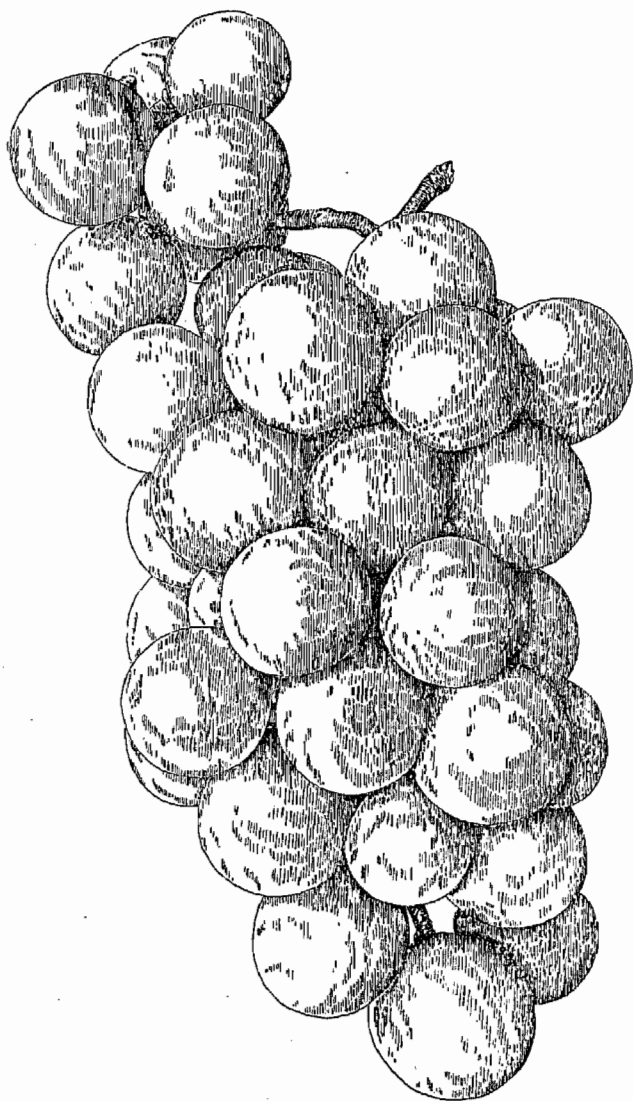
POUGHKEEPSIE (*Labr.-Hybr.*)—Originated by A. J. Caywood, Newburg, N. Y., from Iona crossed with mixed pollen of Delaware and Walter. Vines on our grounds are very vigorous and highly productive. Bunches medium to large, compact, shouldered; berries large, round, light red when fully ripe; skin thin, firm; flesh tender, very juicy, rich, sprightly; quality best. Ripe August 25. It has succeeded remarkably well at the Experiment Station.

PRENTISS (*Labr.*)—Originated from seed of Isabella by J. W. Prentiss, Pultney, N. Y. Our vines fairly vigorous, productive. Bunch small, compact; berry medium, round, greenish-white; skin thin, very tough; flesh, juicy, tender, sweet, pleasant. Ripe August 12. Of doubtful value in this state.

RAGAN.—Originated by T. V. Munson. A hybrid of the wild Post-Oak grape with Triumph or Agawam. Vines vigorous and productive. Bunches above medium, compact, shouldered; berries below medium, round, black with a blue bloom; skin rather thick, tough; flesh very firm, juicy, rich, with a pleasant wild-like flavor. Of interest to the amateur.

SALEM (*Labr.-Hybr.*) Rogers' No. 53.—A hybrid between Wild Mammoth and Black Hamburg. Vines vigorous growers and very productive. Bunches large, compact, shouldered; berries large, round, "of a dark chestnut or catawba color;" skin rather thick; flesh tender, sweet, with a pleasant aromatic flavor; quality very good. Ripe August 12. This variety has been highly successful in the Station vineyard and we regard it valuable for general cultivation.

TELEGRAPH (*Labr.*)—Synonym: Christine.—Originated by Mr. Christine, Westchester, Pa. Vines vigorous and very productive. Bunches above medium, very compact, shouldered; berries above medium, round to oval, black with blue bloom; skin quite thin, tough; flesh firm, juicy, very little pulp, sweet when fully ripe, medium in quality. Ripe July 30. Quality too inferior to make it valuable for extensive cultivation.



POUGHKEEPSIE.

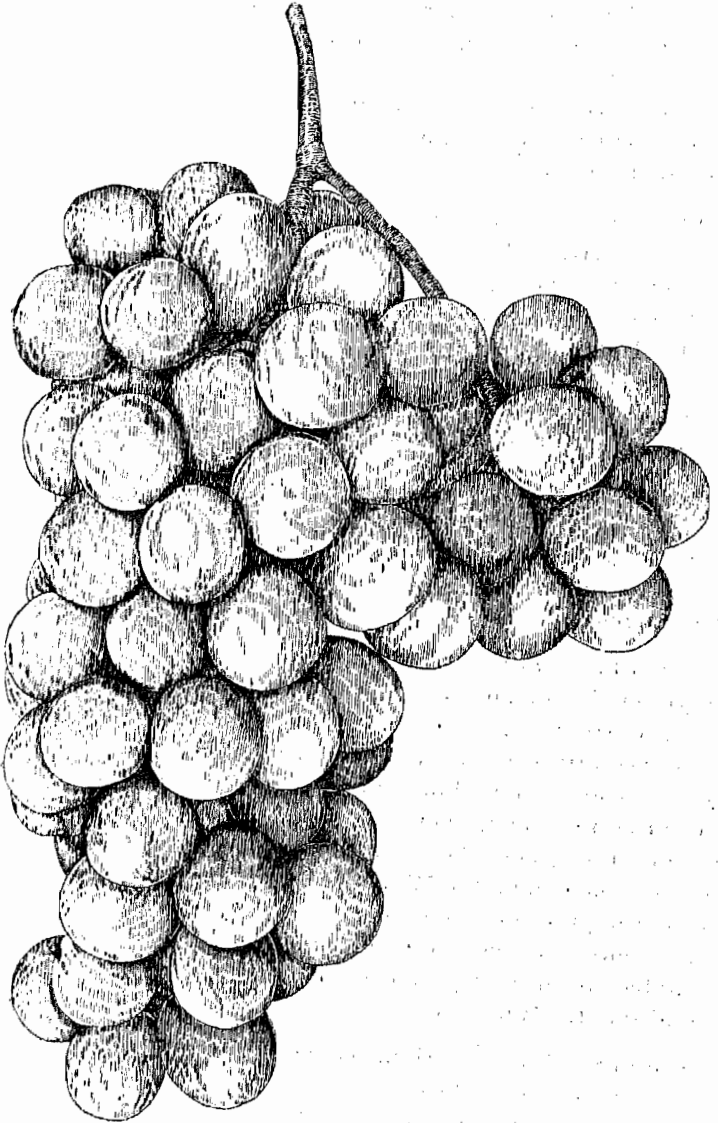
TRIUMPH.—Originated by G. W. Campbell. A cross between Concord and Chasselas Musque. Vines strong growers and productive. Bunches very large, compact, shouldered; berries very large, pale green, assuming a yellow tint when fully ripe; skin thin, very tender, said to crack in unfavorable seasons; flesh sweet, rich, very pleasant; quality very good. Ripe August 30. We consider this a very valuable grape, and it should be thoroughly tested in Tennessee.

VERGENNES (*Labr.*)—Originated in the garden of Wm. E. Green, Vergennes, Vt. A chance seedling. Our vines vigorous and very productive. Bunches medium, compact, sometimes shouldered; berries large, round, with a light amber to red color; skin thick, tough; flesh tender, melting, sweet, pleasant; quality good. Ripe August 25. It possesses superior keeping qualities which render it especially valuable as a winter grape. Where it succeeds it should be included in the collection for home use.

WILDER (*Labr.-Hybr.*) Rogers' No. 4.—Vines vigorous and productive. Bunches large, compact, often shouldered; berries large, nearly black, with slight bloom; skin thin; flesh firm, juicy, rich, pleasant; quality good. A valuable black grape for market. Ripe August 4.

WINCHELL (*Labr.*)—A chance seedling found on the slopes of the Green Mountains of Vermont. Vines in the Station vineyard are strong growers and produce heavy crops. Bunches above medium, compact, well shouldered; berries medium, round, greenish-white; skin thin, quite tender; flesh tender, very sweet, rich, pleasant; quality very good. Ripe July 30. Eminent grape growers throughout the country have made many complimentary remarks concerning the Winchell or Green Mountain grape. We consider it probably the best white grape in our vineyard for the home collection and see no reason why it should not be highly profitable for market purposes. Every Tennessee grape grower should try the Winchell.

WORDEN (*Labr.*)—Originated by Schuyler Worden, Oswego county, N. Y., over thirty-five years ago, from seed of Concord. We have been highly pleased with the behavior of the vines in the Station vineyard. They are very vigorous and yield large crops. Bunches large, compact, handsome, shouldered; berries large, round, black with blue bloom; skin thin, too tender for the berries to ship well; flesh tender, juicy, rich, sweet, delicious;



WINCHELL.

quality very good. Ripe August 4. One of the best varieties for cultivation in the home garden.

WYOMING (*Labr.*)—Originated by Dr. S. J. Parker, Ithaca, N. Y. Vines fairly vigorous and quite productive. Bunches small, compact; berries medium, bright red; flavor decidedly foxy. Not valuable.

VARIETIES REPORTED BY TENNESSEE GROWERS BUT NOT TESTED AT THE EXPERIMENT STATION.

A large number of reports have been received from correspondents in reply to circular letters, issued by the Station several weeks ago, concerning varieties of grapes grown in the state. We thank these growers for their kind co-operation and hope this bulletin will, in a degree, compensate for their valuable assistance. Not having had opportunity to make descriptions of the vines and fruits of the varieties mentioned in this and the following paragraphs we copy brief notes in regard to the most important characteristics of each, from the Bushberg Catalogue, edited by Bush & Son & Meissner, of Bushberg, Mo. A grateful acknowledgment is due this firm for the accurate and reliable notes used on this and the following pages, and also those regarding the origin and blood of several varieties already described.

BARRY (*Labr.-Hybr.*) (Rogers' No. 43.)—One of the most attractive of Rogers' Hybrids, "as handsome as the Black Hamburg," from which it is a seedling crossed on Mammoth Sage. Vine as vigorous, healthy and hardy as any one of Rogers' Hybrids. Bunch large, always rather broad, short and compact; berry large, roundish; color black; flesh tender, sweet, pleasant; skin thin, somewhat astringent. Very productive and early. Reported by J. D. Patton, Cleveland, Tenn., who states that the berries were ripe August 10; vines productive but not especially vigorous.

BEAUTY (*Æst.-Hybr.*)—A cross between Delaware and Maxatawney, raised by Jacob Rommel; a vigorous, healthy grower; resembles Catawba; bunch small to medium, well filled, but not too compact; berry in size and color between Catawba and Delaware, oblong, covered with lilac bloom; thin skinned, and will carry well; of very fine quality. A good table grape. Reported by C. H. Staples, McMinnville, Tenn. He states that the berries

ripened about with Concord, and that the vines are fairly vigorous and productive.

CARMAN (*Linc. X Æst.*)—A seedling of Post-Oak crossed with Herbemont. Originated by T. V. Munson. Vine very vigorous, productive, healthy and hardy; leaves and blooms late, and retains its foliage longer than most varieties; bunch beautiful, very showy, compact, large, conical; berry large, black, with little coloring matter; seeds small; skin thin but tough; pulp meaty, with sweet juice of very good pure flavor and fine quality. Mr. Wm. Jenkins, Knoxville, grows this grape for market, and writes that it was marketable throughout August and that the vines are very vigorous and productive.

IONA (*Labr.*)—Originated by the late Dr. C. W. Grant, of Iona Island, N. Y. It is a seedling of the Diana and the leaf somewhat resembles that variety. Vine a strong grower; bunches usually large, long, shouldered, but not very compact; berries medium to large, slightly oval; skin thin but tenacious; pale red with numerous deep red veins, which become quite dark when fully ripe; flesh tender, with uniform character and consistence to the centre. Flavor rich, sweet, vinous; quality best, equalling the Delaware. An excellent table grape where it succeeds well. It is grown by C. H. Staples, McMinnville, Tenn., who reports it fairly vigorous and medium in productiveness.

ISABELLA (*Labr.*)—Probably a native of South Carolina. Mr. I. Keicher, Conkling, Tenn., reports that it is a good bearer and very vigorous. J. H. Adams writes that it is not a good variety in his vineyard. When it is a success the bunches are large, loose, shouldered; berries oval, large, dark purple, nearly black when fully ripe, and covered with a blue-black bloom; flesh juicy, with a rich, musky aroma; pulp tough, and a great deal of acidity.

LUTIE (*Labr.*)—Originated at Nashville, Tennessee, by Dr. L. C. Chisholm. Vines vigorous in growth and very productive; bunches large and compact; berries pale red at first, dark red when fully ripe; flesh very sweet, very pulpy and foxy; skin tough and of fine appearance. The Lutie is quite largely grown in Tennessee. All growers pronounce it very productive but they do not agree as to the quality of the grape. It is interesting to note the difference of opinions of prominent horticulturists of the country as to its quality. Some pronounce it very good, while others think it decidedly inferior and even offensive. The editors of the Bushberg Catalogue state the following on this

point: We find that this discrepancy grew out of certain peculiar characteristics of this grape. Taken fresh from the vine, it is equal, if not superior to any grape of *Labrusca* character, but several days after gathered, or when over-ripe, it gets quite foxy and drops badly from the bunch. Hence, it is not desirable as a grape for market; but planted in our garden for family use, to be consumed as it ripens, it is of real merit and spreads a fine perfume. Strongly resistant to diseases.

WOODRUFF (*Labr.*)—Originated with C. H. Woodruff, Ann Arbor, Mich., in 1874; a chance seedling supposed to be a cross between Catawba and Concord. This grape has been well tested from Canada to Georgia, and is favorably reported on, especially as a profitable market variety; it may therefore be recommended for general cultivation in many localities.

The vine is vigorous, short-jointed, healthy and very productive; of "iron-clad" constitution; exposed during our severest winters without injury. Its foliage is also one of the healthiest of the *Labrusca* class. Bunch and berry are very large and attractive, in color similar to Salem; and though somewhat foxy, not to our taste, many competent judges pronounce the fruit of the Woodruff as of very good quality. It ripens early and is a long keeper, does not crack nor drop from the stem, but in some localities does not ripen earlier than Concord and does not keep well.

This variety supplies a long felt want; it is now occupying as a red market grape the same position as the Concord and Worden among the black ones. Geo. W. Campbell remarked: "Much has been said against the quality of this grape by eastern grape-growers; it may not be adapted to their soil and climate; but the demand for it has increased largely each successive year, with many expressions of satisfaction from those who have successfully grown and fruited it; I found it to my taste equal to the Niagara or Pocklington."

Wm. Jenkins, of Knoxville, considers this an exceedingly valuable market grape and will plant it more extensively in the future. It was ripe with him the past season, August 10, and the vigorous vines produced a heavy crop.

TWO PROMISING NEW VARIETIES,

CAMPBELL'S EARLY (*Labr.-Hybr.*)—A most promising new grape. "An improved Concord," produced by different crosses from Hartford, Concord, Moore's Early, through Muscat Ham.

burg, selecting the hardiest and healthiest foliated hybrids for succession. Originated by G. W. Campbell, of Delaware, Ohio. In growth and foliage it is as vigorous and healthy as the Concord, ripening earlier, with Moore's Early; its bunch is large, shouldered; berries large, globular, black, with a beautiful blue bloom; flavor rich, without foxiness; flesh a little meaty, sweet to the center, with small seed, parting freely from the pulp. Skin thin but tenacious, hanging to the vine without dropping its berries and remaining in sound condition, without deterioration in quality, until severe frost strips its foliage. It is really an improved Concord, in no respect inferior to it.

Prof. S. B. Heiges, Pomologist of the United States Department of Agriculture, says the following concerning Campbell's Early: Cluster undoubtedly a very fine one, reminding me of a small cluster of Black Hamburg grown under glass. We found some of the berries to be one inch in diameter; the quality is remarkably fine, pulp sweet to the center, with small seeds easily divided from the pulp; the skin thin, but tenacious, making it a valuable shipper. Color a beautiful black with heavy bloom.

EARLY OHIO (*Labr.-Hybr.*)—A chance seedling raised by R. A. Hunt, of Euclid, Ohio. It is very productive, ripening always a week or ten days earlier than Moore's Early on the same soil and under the same circumstances. The vine being a strong grower, quite as hardy and healthy as the Concord, which it resembles, with abundant, healthy foliage and fruit, frequently producing a crop the first year after planting; much earlier and better in quality than Hartford, with superior shipping quality. The Early Ohio is destined to be a popular and profitable market grape, displacing many early grapes of inferior quality.

Bunch large, compact, frequently shouldered; berries only medium in size and quality, yet handsome in appearance; color black, covered with a heavy bloom, and of a spicy, pleasant flavor, better than most other very early sorts, and adhering tenaciously to the stem, a merit highly appreciated and sorely missed in some varieties for market. It is free from mildew and so far seems not very subject to rot. At the New York Agricultural Experiment Station, it is reported to ripen a few days earlier than Moore's Early.

For the home garden, the varieties named in the following list will afford a succession of fruit in this latitude from the middle of

July until after frost: Early Ohio, Moore's Early, Delaware, Worden, Winchell, Brighton, Brilliant, Catawba, Duchess, Herbermont, Clinton, Norton's Virginia.

Popular market varieties in Tennessee: Moore's Early, Niagara, Concord, Delaware, Diamond, Catawba, Woodruff and Carman.

The illustrations of this bulletin were reproduced from drawings made of photographs of medium sized bunches grown in the Station vineyard.